

Required Procedures for Respiratory Protection Program

WAC 296-842-220

Rule

Table 14
Bitrex™ Aerosol Test Procedure

Important:

- This is a qualitative fit-test (QLFT) procedure.
- Bitrex (denatonium benzoate) is routinely used as a taste aversion agent in household liquids that children should not drink and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers.
- The employee must **not** eat, smoke, chew gum or drink anything but plain water for at least 15 minutes **before** the fit test.

Screening Preparations

Important:

- Taste threshold screening determines whether the employee being tested can detect the taste of Bitrex.
- Nebulizers must be thoroughly rinsed in water and shaken dry:
 - Each morning and afternoon
 - or**
 - At least every 4 hours
- You may use commercially prepared solutions if they meet the requirements in this procedure.

1. Obtain a test enclosure that meets the following specifications:

- 12 inches in diameter by 14 inches tall
- A clear front portion
- Enough space inside the front to allow free movement of the head when a respirator is worn
- $\frac{3}{4}$ inch (or 1.9 centimeter) hole to accommodate the nebulizer nozzle. The hole must line up in front of the wearer's nose and mouth.

Note:

- An enclosure similar to the 3M hood assembly, parts #FT 14 and #FT 15 combined, meets these specifications.
- This enclosure can also be used for testing.

2. Obtain and assemble 2 clean DeVilbiss Model 40 Inhalation Medication Nebulizers **or** equivalent:

3. Prepare the screening solution as follows:

- Make up a 5% salt solution by dissolving 5.0 grams of salt (sodium chloride) into 100 ml of distilled water
- Dissolve 13.5 milligrams of Bitrex in the salt solution.

4. Add about 1 ml of the screening solution to one of the nebulizers.

- Mark this nebulizer to distinguish it from the one to be used for fit testing.

Required
Procedures



Required Procedures for Respiratory Protection Program

WAC 296-842-220

Rule

Table 14 (Continued)
Bitrex™ Aerosol Test Procedure

Test Preparations

5. Prepare the fit test solution.
 - Dissolve 10.0 grams of salt (sodium chloride) into 200 ml of distilled water
 - Add 337.5 milligrams of Bitrex to the warmed salt solution.
6. Add about 1 ml of the test solution to the second nebulizer.
 - Mark this nebulizer to distinguish it from the one used for screening.
7. Have particulate filters ready for the employee's chosen respirator or have filtering facepiece respirators ready.

Screening

Important:

The employee must **not** eat, smoke, chew gum or drink anything but plain water for at least 15 minutes **before** the screening and test.

8. Have the employee, while **not** wearing a respirator, put on the test enclosure.
9. Instruct the employee to:
 - Breathe through a slightly opened mouth with tongue extended during screening **and** testing
 - Immediately report when a bitter taste is detected
10. Insert the nebulizer into the front hole of the test enclosure **and** administer Bitrex as follows:
 - Direct the nozzle away from the employee's nose and mouth
 - Complete 10 squeezes in rapid succession.
 - Each time firmly squeeze the bulb so it collapses completely, then release and allow it to fully expand.
11. Ask the employee whether a bitter taste is detected.
 - If **yes**, screening is completed. Proceed to conduct testing, Step 14, **after** you:
 - Ask the employee to remember the taste for reference during the fit test.
 - Note the employee's taste threshold as "10", regardless of the number of squeezes actually completed.
 - If **no**, screening must continue. Proceed to Step 12.
12. Repeat with 10 more squeezes. Then follow Step 11 again; **except** this time note the employee's taste threshold as "20" **if** a bitter taste is reported.
 - If a bitter taste is still **not** detected repeat with 10 more squeezes and follow Step 11 one last time; **except** this time note "30" for the taste threshold **if** a bitter taste is reported.
13. If **no** bitter taste is reported after 30 squeezes, you must **stop** and choose a different fit test protocol for the employee.



Required Procedures for Respiratory Protection Program

WAC 296-842-220

Rule

Table 14 (Continued)
Bitrex™ Aerosol Test Procedure

Test

14. Have the employee attach respirator filters, put on, properly adjust, and seal check the respirator. Have the employee put on the test enclosure.
15. Instruct the employee to:
 - Breathe through a slightly opened mouth with tongue extended during screening **and** testing
 - Immediately report when a bitter taste is detected
16. Insert the nebulizer into the front hole of the test enclosure **and** administer the same number of squeezes, either 10, 20, or 30, as noted during screening.
17. Have the employee perform the appropriate fit test exercises as described in Table 19. During this step:
 - Replenish the aerosol in the hood **every** 30 seconds using ½ the number of squeezes used in Step 16, either 5, 10, or 15.
 - The employee must report if a bitter taste is detected:
 - If **no** Bitrex is tasted, the test has been **passed**.
 - If Bitrex is tasted the test has **failed**. Have the employee:
 - Select another respirator
 - and**
 - Repeat all screening and testing steps

Required
Procedures

